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**YENEPOYA INSTITUTE OF ARTS, SCIENCE, COMMERCE AND
MANAGEMENT
BALMATTI, MANGALORE**

PROJECT SYNOPSIS

FOR

SALES PERFORMANCE ANALYSIS

BACHELOR OF COMPUTER APPLICATION

BCA (Big Data Analytics, Cloud Computing and Cybersecurity) With IBM

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I. TITLE OF THE PROJECT

Sales Performance Analysis

II. STATEMENT OF THE PROBLEM

Many businesses, including the context simulated by the Superstore dataset, face challenges in effectively analyzing their sales data to gain actionable insights. These challenges often include difficulties in identifying key trends, understanding product and regional performance, and pinpointing areas for strategic improvement. Traditional methods or basic data exploration may not provide the dynamic and visual understanding needed for timely and informed decision-making. This project addresses this problem by developing an interactive Sales Performance Dashboard using SQLite for data extraction and Power BI for visualization, enabling efficient monitoring of key sales metrics and the identification of critical business insights..

III. WHY THIS PARTICULAR TOPIC CHOSEN?

Analyzing sales data is fundamental for understanding business health and driving growth. This topic was chosen because:

- It directly tackles a common business need for insightful sales analysis.
- It leverages accessible and powerful tools like SQLite and Power BI for a practical solution.
- It provides a hands-on opportunity to extract meaningful information from a real-world simulated dataset.
- It aligns with the increasing importance of data-driven decision-making in various industries.
- It lays a foundation for understanding data analysis workflows, from data querying to visualization.

IV. OBJECTIVE AND SCOPE

The primary objective of this project is to develop an interactive dashboard that enables the analysis and visualization of Superstore sales performance. The project will:

- Provide an intuitive Power BI dashboard for monitoring key sales metrics.
- Enable the identification of top-performing products, customer segments, and geographic regions based on sales and profit.
- Highlight potential areas for improvement by analyzing low-performing products or regions.
- Explore sales trends over time to identify seasonal patterns or growth trajectories.
- Facilitate interactive filtering and exploration of the data through Power BI slicers.
- Utilize SQLite to query and extract relevant data for visualization in Power BI.

V. METHODOLOGY

This project follows an iterative approach, focusing on building a functional and insightful dashboard through the following steps:

1. Data Extraction and Exploration: Using SQL queries in SQLite to understand the Superstore dataset and extract initial key metrics.
2. Data Connection and Modeling: Connecting the SQLite database to Power BI Desktop and structuring the data model for effective analysis.
3. Visualization Development: Creating a series of interactive visualizations in Power BI, including bar charts, line charts, donut charts, maps, and key performance indicators (KPIs).
4. Insight Generation: Analyzing the visualizations to identify trends, top performers, and areas for improvement in sales strategies.
5. Dashboard Refinement: Iteratively improving the dashboard layout, design, and interactivity based on the insights gained and feedback.
6. Documentation: Documenting the process, key findings, and potential recommendations.

VI. PROCESS DESCRIPTION

The project involves the following key stages:

- **Data Acquisition:** Utilizing the Superstore dataset (simulated).
- **Data Querying (SQLite):** Employing SQL queries to extract and aggregate sales data by various dimensions (product category, region, customer segment, order date, etc.).
- **Data Import (Power BI):** Importing the queried data into Power BI Desktop.
- **Dashboard Creation (Power BI):** Developing interactive visualizations to represent sales performance, including:
 - o Overall sales and profit metrics.
 - o Sales trends over time.
 - o Sales and profit by product category and sub-category.
 - o Sales by customer segment.
 - o Sales and profit by geographic region (state, potentially country if data allows).
 - o Top-performing customers and products.
- **Interactive Filtering:** Implementing slicers for dimensions like region, state, and product category to allow users to explore specific subsets of the data.
- **Insight Communication:** Presenting key findings and potential recommendations based on the dashboard analysis.

VII. RESOURCES AND LIMITATIONS

Resources Required:

- **Software:** DB Browser for SQLite, Power BI .
- **Data Sources:** Superstore sales dataset (in SQLite format).

- **Development Tools: Computer with the necessary software installed. DB browser for SQLite, Power BI Desktop**

Limitations:

- **The project is based on a static, simulated dataset, so real-time data updates are not applicable.**
- **The depth of analysis is limited by the fields available in the Superstore dataset.**
- **Advanced features of Power BI Service (like real-time collaboration and embedding) are outside the scope of this initial project but could be future enhancements.**

VIII. TESTING TECHNOLOGIES USED

Testing in this project primarily involves:

- **Data Validation:** Ensuring the accuracy of SQL queries and the correctness of data imported into Power BI.
- **Visual Inspection:** Verifying that the visualizations accurately represent the data and are easy to understand.
- **User Acceptance Testing (Simulated):** Evaluating the dashboard's usability and ability to answer key business questions related to sales performance.
- **Interactive Testing:** Ensuring that slicers and filters function correctly and provide meaningful insights.
- **Security Testing:** basic security considerations will be addressed by: Ensuring the Superstore dataset is stored and accessed in a manner that respects data privacy

IX. CONCLUSION

This Superstore Sales Performance Dashboard project aims to demonstrate the power of combining data querying with interactive visualization to analyze sales performance. By leveraging SQLite and Power BI, the project provides a user-friendly platform to monitor key sales metrics, identify top performers, uncover trends, and highlight potential areas for strategic improvement within the context of the Superstore dataset. This initiative showcases an efficient approach to transforming raw sales data into actionable business intelligence, laying the groundwork for future enhancements and more sophisticated analytical capabilities.